General Information:

BUILDING CONSTRUCTION 3

Name of Course:	
Course Code:	PMRESNE039A
Semester:	4th
Number of Credits:	7
Allotment of Hours per Week:	2 Lectures/Week 2 Practical Lessons /Week
Evaluation:	Exam
Prerequisites:	**Engineering Physics 1. Heat and Humidity Technologies, Building Construction 2.**

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Introduction, Learning Outcomes:

This course expands your knowledge from what you learned in previous Building Constructions courses and covers the following topics: design and construction of monolith reinforced frame constructions; variety of foundations; reinforced concrete frame stairs; expansion joints; methods of waterproofing and damp-proofing, traditional and modern waterproofing techniques (sprayed, coating insulation etc.), materials of waterproofing and their application; utilised roofs, roofs open to pedestrian traffic, terraces, parking roofs and roofs with vegetation; internal structures for enclosing space, dry wall systems; mounted constructions, suspended ceilings and mounted floors, internal surfacing, floors and internal coverings; cavity walls design, external wall claddings. This subject includes an architectural design project in the practical part where you can practice and further develop the content of the lectures.

General Course Description and Main Content:
This subject continues the study of students attending the M.Sc. programme. The aim is for students to be able to solve tasks independently, by using the methods and systems they learned about.

The Degree Project's course includes:

- There are lectures on the topics of the course, each week. The theoretical knowledge will be deepened in practical lessons delivered by the teacher. Students need to prepare the following drawings during the semester:
- Final construction drawings of a reinforced concrete framed building: floor plans of all different levels M1:50, 2 sections M1:50, 4 details M1:5 or M1:10; Final construction drawings of a flat roof insulation: floor plans M1:50, 2 sections M1:50, 3 details M1:5 or M1:10; Final construction drawings of an insulation against utility water: floor plans M1:50, 2 sections M1:50, 3 details M1:5 or M1:10; Flooring plan: layout M1:50, 3 details M1:5
- Students should take 2 midterm exams on topics studied in lectures. No notes may be used.
- During the semester students should develop a case study according to the themes of lectures. The theme of the study must be approved by the teacher.

Methodology:

The course is based on individual architectural skills with regular consultations and presentations.

Schedule:

	Tuesday	Lectures: 9.30-11.00	Practical lessons: 11.15-12.45
1.	3rd February	Formation of framed buildings; structural systems. Reinforced concrete frames / foundations, slabs	Reinforced concrete framed building: cross section – layout Description of first drawing task
2.	10th February	Reinforced concrete frames / rigidity, stairs	Reinforced concrete framed building: longitudinal section
3.	17th February	Construction joints, movement joints	Consultation of first drawing task
4.	24th February	Flat roof insulation / structure design principles	Consultation of first drawing task
5.	3rd March	Flat roof insulation / not accessible roofs, terrace roofs	Consultation of first drawing task
6.	10th March	green roofs, and roofs accessible by car	Terrace roof insulation plan Description of second drawing task Submit the first drawing task
7.	17th March	Utilised roofs	Consultation of second drawing task
8.	24th March	Exam	Consultation of second drawing task
9.	31st March	Insulation against utility and operating water	Insulation-plan against utility water Submit the second drawing task Description of third drawing task
10.	7th April	Spring Break	Spring Break
11.	14th April	Insulations in soil, structural design principles	Consultation of third drawing task
12.	21st April	Insulations in soil, ex post wall insulations	Insulations in soil Consultation of third drawing task
13.	28th April	Floor structures, acoustic, traditional flooring, dry floors	Consultation of third drawing task
14.	5th May	Wet- and dry-bound partitions	Flooring plan Submit the third drawing task Description of fourth drawing task
15.	12th May	Exam	Submit the fourth drawing task

Studio Culture:
The course is based on thorough collaboration, participation and discussions in the lessons. This is an interaction between students and faculty, using teaching methods such as problem-based learning and learning-by-doing. The communication and work should reflect a respect for fellow students and their desire to work with regard to noise levels, noxious fumes, etc. – from each of the participants.

Attendance:
Attending is required in all classes, and will impact the grade (max. 10%). Unexcused absences will adversely affect the grade, and in case of absence from more than 30% of the total number of lessons will be grounds for failing the class. To be in class at the beginning time and stay until the scheduled end of the lesson is required, tardiness of more than 20 minutes will be counted as an absence. In the case of an illness or family emergency, the student must present a valid excuse, such as a doctor's note.

The highest possible grade on the late project (in two weeks) is a 2. The Final Project cannot be turned in late.

Evaluation + Grading
The final grade for this course is a composite of the (1) score collected during the semester and (2) the result of the exam.
(1)
Grading of work completed during the semester will follow the course structure with the following weights: Midterm Exam 1, 15%, Midterm Exam 2, 15%, Plan of a reinforced concrete framed building 15%. Roof insulation plan, 13%, Insulation-plan against utility water 15%, Flooring plan 7%, Case study 10%. The remaining 10% will be assessed according to participation, progress, effort and attitude. Please note that attendance will adversely affect one's grade, both in direct grade reduction and in missing work in the development of a project. The final grade will be based on the following guidelines:

5. Outstanding work. Execution of work is thoroughly complete and demonstrates a superior level of achievement overall with a clear attention to detail in the production of drawings, models and other forms of representation. The student is able to synthesize the course material with new concepts and ideas in a thoughtful manner, and is able to communicate and articulate those ideas in an exemplary fashion in.

4. High quality work. Student work demonstrates a high level of craft, consistency, and thoroughness throughout drawing and modelling work. The student demonstrates a level of thoughtfulness in addressing concepts and ideas, and participates in group discussions. Work may demonstrate excellence but less consistently than an '5' student.

3 Satisfactory work. Student work addresses all of the project and assignment objectives with few minor or major problems. Graphics and models are complete and satisfactory, exhibiting minor problems in craft and detail.

2. Less than satisfactory work. Graphic and modelling work is substandard, incomplete in significant ways, and lacks craft and attention to detail.

1. Unsatisfactory work. Work exhibits several major and minor problems with basic conceptual premise, lacking both intention and resolution. Physical representation in drawing and models is severely lacking, and is weak in clarity, craft and completeness.

Grading Scale:

Numeric Grade:	5	4	3	2	1
Evaluation in points:	90%-100%	77%-89%	64%-76%	51%-63%	0-50%

(2)
Students must take an examination in the exam period. It consists of two parts:

- written: drawing task, preparing two plans related to the themes of semester. 180 minutes. Maximum points: 50
- oral: Two of the theorems listed below have to be developed. Maximum points: 50

Theorems:

- 1. Reinforced concrete framed buildings (structural systems and elements, acoustic, thermal bridge, rigidity, construction joints)
- 2. Design principles of flat roofs (materials, layers…)
- 3. Flat roofs- not accessible roofs
- 4. Flat roofs- designing terrace roofs
- 5. Flat roofs- green roofs and roofs accessible by car
- 6. Design principles of water insulation against utility and process water (materials, layers…)
- 7. Design principles of water insulation against soil moisture
- 8. Design principles of water insulation in case of permanent groundwater pressure
- 9. Design principles of water insulation in case of temporary groundwater pressure
- 10. Design principles of post wall insulations
- 11. Acoustic design of floors
- 12. Design principles of traditional flooring
- 13. Design principles of dry and raised floors
- 14. Design principles of wet-mounted wall constructions
- 15. Design principles of dry-mounted wall constructions

PTE Grading Policy:
Information on PTE's grading policy can be found at:
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Students with Special Needs:
Students with a disability and needs to request special accommodations, please, notify the Dean's Office. Proper documentation of disability will be required. All attempts to provide an equal learning environment for all will be made.

Readings and Reference Materials:

R. Barry: THE CONSTRUCTION OF BUILDINGS Volume 4
Andrea Deplazes: Constructing Architecture
Alexander Reichel, Kerstin Schultz: Support/Materialize